AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF THE CLAIMS:

Claims 1-172 : (Canceled)

Claim 173 : (Canceled)

Claim 174 : (Currently Amended) The method of ~~claim 173~~ claim 209, comprising the step of converting the virtually concatenated information structure so transported into a second data signal of the same form as the first data signal transmitted to an output port of the node of the SDH network, the converting step including the step of processing the POH of the first data signal by restoring said part of the POH used to indicate the sequence of the frames in the virtually concatenated information structure.

Claim 175 : (Currently Amended) The method of ~~claim 173~~ claim 209, wherein the first data signal transmitted to the SDH network from outside the SDH network is in contiguously concatenated form.

Claim 176 : (Currently Amended) The method of ~~claim 173~~ claim 209, wherein the first data signal from outside the SDH network comprises a virtual container four (VC-4) or virtual container three (VC-3) or an administrative unit three (AU3).

Claim 177 : (Previously Presented) The method of claim 176, wherein the POH comprises bytes H4, J1 and B3, wherein the VC-4 and VC-3 comprise a plurality of the frames, and the step of processing the POH includes the steps of using byte H4 for indicating

the sequence of the frames within the VC-4 or VC-3, using byte J1 to indicate an order of VC-4s or VC-3s in the virtually concatenated information structure, and correcting, as necessary, error indication information carried in byte B3.

Claim 178 : (Previously Presented) The method of claim 177, wherein the transmitting step transmits a first concatenated signal in the form comprising four contiguously concatenated VC-4s, and wherein the processing step processes the four VC-4s into the virtually concatenated information structure comprising virtually concatenated VC-4s for transfer across the SDH network.

Claim 179 : (Previously Presented) The method of claim 177, wherein the transmitting step transmits a first concatenated signal in the form comprising five contiguously concatenated VC-3s, and wherein the processing step processes the five VC-3s into the virtually concatenated information structure comprising virtually concatenated VC-3s for transfer across the SDH network.

Claim 180 : (Previously Presented) The method of claim 178, comprising the step of aligning the virtually concatenated virtual containers (VCs) of the virtually concatenated information structure using a buffer.

Claim 181 : (Previously Presented) The method of claim 180, comprising the step of controlling the aligning step according to contents of bytes J1 and H4.

Claim 182 : (Previously Presented) The method of claim 178, comprising the steps of switching and transmitting the VC-4 or VC-3 frames of the virtually concatenated information structure through the SDH network together in a single synchronous transfer module (STM) or in multiple STMs and via a same route.

Claim 183 (Currently Amended) The method of ~~claim 173~~ claim 209, wherein the first data signal from outside the SDH network comprises a virtual container two (VC-2) or a virtual container one (VC-1).

Claim 184 : (Previously Presented) The method of claim 183, wherein the POH comprises bytes V5, J2, N2 and K4, and wherein the step of processing the POH includes the step of transferring contents of the POH bytes to unused parts of the first data signal.

Claim 185 : (Previously Presented) The method of claim 184, wherein the transmitting step transmits the first data signal in the form comprising two or more contiguously concatenated VC-2s or VC-1s, and wherein the processing step processes the VC-2s or VC-1s into the virtually concatenated information structure comprising virtually concatenated VC-2s or VC-1s for transfer across the SDH network.

Claim 186 : (Previously Presented) The method of claim 185, comprising the step of aligning the virtually concatenated virtual containers (VCs) of the virtually concatenated information structure using a buffer.

Claim 187 : (Previously Presented) The method of claim 186, comprising the step of controlling the aligning step according to contents of the POH byes transferred to the unused parts of the POH of the virtually concatenated information structure.

Claim 188 : (Previously Presented) The method of claim 185, in which the contiguously concatenated VC-2s or VC-1s received from outside the SDH network comprise a plurality of the frames in a set sequence, and in which the set sequence of the frames changes while being transported through the SDH network, and comprising the step of re-ordering the frames into the set sequence as required.

Claim 189 : (Previously Presented) The method of claim 185, in which the VC-2s and VC-1s comprise a plurality of the frames, and includes the steps of switching and transmitting the VC-2 or VC-1 frames of the virtually concatenated information structure through the SDH network together in a single synchronous transfer module (STM) or in multiple STMs.

Claim 190 : (Currently Amended) The method of ~~claim 173~~ claim 209, comprising the step of recognizing a receipt of the first data signal in concatenated form by the SDH network.

Claim 191 : (Currently Amended) A synchronous digital hierarchy (SDH) network in which data is carried in a virtually concatenated information structure, the network comprising: tributary interfaces arranged and configured to process at least one first data signal received in a contiguously concatenated ~~form~~ information structure and to convert it into the virtually concatenated information structure for transfer across the network, the virtually concatenated information structure comprising a plurality of virtual containers (VC-n) within a concatenated virtual information structure (VC - n - Xvc) ~~(VC)~~ in which the ~~at least one~~ first data signal is distributed across the plurality of virtual containers ~~VC~~; and conversion means for processing a path overhead (POH) of the ~~at least one~~ first data signal and creating a new POH for each individual virtual container in the virtually concatenated information structure and using ~~by using~~ a part of the POH to indicate a sequence of frames in the virtually concatenated information structure, in which the integrity of the information in the POH of the first data signal is maintained.

Claim 192 : (Currently Amended) The network of claim 191, wherein the tributary interfaces are arranged and configured to process the ~~at least one~~ first data

signal transferred across the SDH network in the virtually concatenated information structure and to convert it into a second data signal having the same contiguously concatenated form as that of the first data signal.

Claim 193 : (Currently Amended) The network of claim 192, wherein the tributary interfaces comprise at least one buffer for aligning the virtual containers ~~the VC~~.

Claim 194 : (Currently Amended) The network of claim 191, wherein the tributary interfaces are configured and arranged to detect the receipt of the ~~at least one~~ first data signal in the contiguously concatenated form by detecting a concatenation indication of the ~~at least one~~ first data signal.

Claim 195 : (Currently Amended) A method of transmitting data in a virtually concatenated information structure comprising a plurality of virtual containers (VC-ns), a path overhead (POH) and a plurality of frames, the method comprising the steps of: distributing the data across the plurality of virtual containers within a concatenated virtual information structure (VC - n - Xvc) ~~VC-ns~~; transmitting the data in a sequence of the frames; and using a part of the POH in the virtual containers to indicate the sequence of the frames in the virtually concatenated information structure.

Claim 196 : (Previously Presented) The method of claim 195, wherein the POH comprises an H4 byte, the method including the step of using the H4 byte for indicating the sequence of the frames.

Claim 197 : (Currently Amended) The method of claim 195, wherein the POH comprises a J1 byte, the method including the step of using the J1 byte to indicate an order of the virtual containers ~~VC-ns~~ in the virtually concatenated information structure.

Claim 198 : (Previously Presented) The method of claim 195, wherein the POH comprises a B3 byte for providing an error indication, the method including the step of correcting, as necessary, the error indication carried in byte B3.

Claim 199 : (Currently Amended) A virtually concatenated information structure for carrying data in a frame sequence, comprising: a plurality of virtual containers (VC-ns); a plurality of frames; a path overhead (POH); the data being distributed across the plurality of virtual containers within a concatenated virtual information structure (VC - n - Xvc) ~~VC-ns~~; and a part of the POH comprising means for indicating the frame sequence in the virtually concatenated information structure.

Claim 200 : (Previously Presented) The virtually concatenated information structure of claim 199, wherein the POH comprises an H4 byte for indicating the frame sequence.

Claim 201 : (Currently Amended) The virtually concatenated information structure of claim 199, wherein the POH comprises a J1 byte for indicating an order of the virtual containers ~~VC-ns~~ in the virtually concatenated information structure.

Claim 202 : (Previously Presented) The virtually concatenated information structure of claim 199, wherein the POH comprises a B3 byte for providing an error indication.

Claim 203 : (Previously Presented) The virtually concatenated information structure of claim 199, wherein the virtually concatenated information structure comprises a virtual container four (VC-4) or virtual container three (VC-3) or an administrative unit three (AU3).

Claim 204 : (Previously Presented) The virtually concatenated information structure of claim 203, wherein the POH comprises an H4 byte and a J1 byte, and wherein the H4 byte and the J1 byte comprise information for controlling alignment of the VC-ns.

Claim 205 : (Previously Presented) The virtually concatenated information structure of claim 199, derived from conversion of a first data signal from outside a network that comprises a virtual container two (VC-2) or a virtual container one (VC-1).

Claim 206 : (Canceled)

Claim 207 : (Canceled)

Claim 208 : (Canceled)

Claim 209 : (Currently Amended) A method of transmitting data in a synchronous digital hierarchy (SDH) network, comprising the steps of:

a) transmitting to an input port of an ingress node of the SDH network a first data signal from outside the SDH network, the first data signal having concatenated virtual containers ~~concatenated (VC-ns)~~;

b) aligning pointers of the first data signal ~~concatenated VC-ns~~ at the input port;

c) converting the first data signal into a virtually concatenated information structure that comprises a plurality of the virtual containers ~~VC-ns~~ within a concatenated virtual information structure ~~container (VC-n-Xvc)~~;

d) processing associated path overheads (POHs) of the first data signal ~~VC-ns in the virtual concatenated information structure~~ by

i) creating a unique path overhead (POH) value for each of the virtual containers in the concatenated virtual information structure and maintaining ~~VC-n to maintain~~ path integrity of the first data signal ~~each VC-n~~;

ii) ensuring that all of the ~~VC-ns~~ virtual containers are transferred in a correct sequence relative to each other; and

iii) ensuring that frames of each ~~VC-n~~ virtual container in the concatenated virtual information structure ~~containers (VC-n-Xvcs)~~ are correctly ordered; and

c) transporting the virtually concatenated information structure through the SDH network to an egress node of the network.

Claim 210 : (Currently Amended) The method of claim 209, further comprising the step of converting the virtually concatenated information structure at an output port of the egress node of the SDH network back into a second data signal having the same concatenated ~~VC-ns~~ virtual containers as that of the first data signal by restoring the pointers, concatenation indicators, and POH bytes.

Claim 211 : (Currently Amended) The method of claim 210, wherein the concatenated ~~VC-ns~~ virtual containers of the respective ~~VC-n-Xvcs~~ concatenated virtual information structure are aligned at the output port of the egress node according to information derived from the sequence and frame order.

Claim 212 : (Currently Amended) The method according to claim 211, wherein a buffer is provided, and the step of aligning the ~~VC-ns using~~ virtual containers uses the buffer.

Claim 213 : (Currently Amended) The method of claim 209, wherein the first data signal comprises higher order virtual containers ~~VCs~~, the POH of the first data signal comprises bytes H4, J1, and B3, the ~~VC-ns~~ virtual containers in the virtual concatenated information structure comprises a plurality of frames, and the step of processing the POH of the virtual concatenated information structure includes the step of using the H4 byte for indicating a sequence of the frames within the ~~VC-n-Xvc,~~ concatenated virtual information structure using the J1 byte to indicate an order of ~~VC-ns~~ the virtual containers in the ~~VC-n-Xvc~~ concatenated virtual information structure, and correcting, as necessary, error indication information carried by the B3 byte.

Claim 214 : (Currently Amended) The method of claim 209, wherein the first data signal comprises lower order virtual containers ~~VCs~~, the POH of the first data signal comprises bytes V5, J2, N2, and K4, the ~~VC-ns~~ virtual containers of the virtually concatenated information structure comprises a plurality of frames, and the step of processing the POH of the virtually concatenated information structure includes the step of transporting the V5, J2, N2, and K4 bytes in otherwise unused bytes or bits of the virtually concatenated information structure.

Claim 215 : (Previously Presented) The method of claim 214, wherein the otherwise unused bytes or bits are the fixed stuff bits (R) or overhead bits (O).